

APPROVED FOR RELEASE: 2007/02/08: CIA-RDP82-00850R000300040038-3

2 :.980

1 OF 1

FOR OFFICIAL USE ONLY

JPRS L/9358

22 October 1980

Japan Report

(FOUO 28/80)



FOREIGN BROADCAST INFORMATION SERVICE

FOR OFFICIAL USE ONLY

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

COPYRIGHT LAWS AND REGULATIONS GOVERNING OWNERSHIP OF
MATERIALS REPRODUCED HEREIN REQUIRE THAT DISSEMINATION
OF THIS PUBLICATION BE RESTRICTED FOR OFFICIAL USE ONLY.

FOR OFFICIAL USE ONLY

JPRS L/9358

22 October 1980

JAPAN REPORT

(FOUO 28/80)

CONTENTS

POLITICAL AND SOCIOLOGICAL

- ROK Studying Steps To Counter Japan's Expanded Trade
With DPRK
(NIHON KEIZAI SHIMBUN, 29 Sep 80) 1

- 'MAINICHI' Views Suzuki's Tasks in Current Diet Session
(Editorial; MAINICHI DAILY NEWS, 30 Sep 80) 3

MILITARY

- Government Contemplates Placing 'Priority' on Naval Force
(Philippe Pons; LE MONDE, 1 Oct 80) 5

- Controversial Questions Dominate Defense Scene
(Yoshiteru Oka; BUSINESS JAPAN, Sep 80) 9

ECONOMIC

- Government To Relax Yen Loan Ban to International
Organizations
(THE JAPAN TIMES, 3 Oct 80) 11

- MITI To Submit Bill to Diet To Maintain LPG Stockpile
(JIJI, 30 Sep 80) 12

Briefs

- PRC Shipyard Contract 13
Loan to Jordan 13
Bank Loan to China 13
TV Plant in Shanghai 13

- a -

[III - ASIA - 111 FOUO]

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

SCIENCE AND TECHNOLOGY

Toshiba Develops Reactive Ion Etching System (NIKKAN KOGYO SHIMBUN, 5 Sep 80)	15
NTT Researchers Make Flourine Glass Material for Optical Fiber (THE JAPAN ECONOMIC JOURNAL, 30 Sep 80)	17
Briefs Fujitsu Robot Plant	18

- b -

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

POLITICAL AND SOCIOLOGICAL

ROK STUDYING STEPS TO COUNTER JAPAN'S EXPANDED TRADE WITH DPRK

OW010427 Tokyo NIHON KEIZAI SHIMBUN in Japanese 29 Sep 80 Morning Edition p 3

[Text] The ROK Government is strongly opposed to the recent moves of Japanese industries to actively expand trade with North Korea (DPRK) as seen in the setup of the "East Asia Trade Research Society" by business circles. For countermeasures, it is reportedly studying the following measures: 1) Introduction of an item-by-item import quota system for quantitative control; and 2) preferential treatment of enterprises which quit importing from Japan and shift their procurement sources to third countries in the form of sharp tariff reductions and import loans. Major business companies in Japan are now taking a wait-and-see attitude, saying "if taken, such steps would not help ROK industry in view of its present, close connections with Japan." However, Japanese firms are now receiving many letters protesting Japan's moves to expand trade with North Korea, and many enterprises in Japan are likely to face new difficulties in trade with their counterparts on the Korean Peninsula.

A delegation of the LDP's Afro-Asian affairs study group recently visited Pyongyang and proposed expanded trade by following what is called the memorandum formula. President Kim Il-song, while hailing the proposal, said that North Korea would like to have business relations with large Japanese companies. Further, the Japan-DPRK Trade Association has reached an agreement with North Korea on revising 15-year-old trade regulations and procedures. Thus, moves between Japan and North Korea to expand procedures. Thus, moves between Japan and North Korea to expand their trade are now being made. In addition, prior to all these actions, a study organization called "the East Asia Trade Research Society" was inaugurated at the request of the chairman of the Japan Federation of Economic Organizations, Yoshihiro Inayama, and Japan Foreign Trade Council Chairman Tatsuzo Mizukami.

These efforts by Japan have given the ROK an increased sense of crisis, causing it to believe that "expanded trade between Japan and North Korea is undesirable because it would lead to reinforced military

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

strength in North Korea." The ROK side publicly says that it is studying the above-mentioned steps against Japan to "rectify its unbalanced trade with Japan." However, the steps were reportedly formulated by the Korean Chamber of Commerce at the instruction of the government. ROK financial leaders are actually explaining to major business companies in Japan that "steps are under study to urge Japan to reconsider its access to North Korea." On the other hand, the Japan Federation of Economic Organizations has received a letter from the Federation of Korean Industries in the ROK demanding that the former secede from or do not join the East Asia Trade Research Society. A similar letter was also received by the Japan Foreign Trade Council from the Korean Traders Association.

Commenting on these moves by the ROK side, major business firms in Japan say: "Japan and the ROK are maintaining close business relations. The ROK enterprises purchase various equipment and materials from Japan. They also import raw materials from Japan to export them after processing. In terms of profit, too, it seems impracticable for them to quit importing from Japan and shift procurement sources to third countries." Thus, many Japanese firms rather doubt that the ROK side will really implement those steps against Japan. Further, a Japanese mission--which visited the ROK some time ago in a bid to promote imports from that country--promised to buy goods worth \$1.2 billion. Excessive steps by the [word indistinct] might only provoke Japan's antipathy.

There is also a possibility that the ROK might really take certain strong steps against Japanese enterprises seeking to establish close relations with North Korea, in view of the prevailing strong nationalism in the ROK under the Chon Tu-hwan regime and the belief of the ROK that expanded exchange between Japan and North Korea will lead to reinforced military strength in North Korea.

COPYRIGHT: Nihon Keizai Shimbunsha 1980

CSO: 4105

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

POLITICAL AND SOCIOLOGICAL

'MAINICHI' VIEWS SUZUKI'S TASKS IN CURRENT DIET SESSION

OW011117 Tokyo MAINICHI DAILY NEWS in English 30 Sep 80 p 2

[Editorial: "Suzuki and Extra Diet"]

[Text] The leadership of Prime Minister Zenko Suzuki will be put to the acid test throughout the 93rd extra Diet session, which opened Monday two months after he took office following the overwhelming victory of the Liberal-Democratic Party in the dual elections in July. His varied statements have so far been ambiguous and inconsistent, and the nation is beginning to wonder if he is qualified for the post.

The LDP had been in a tough spot for several years because of the almost equal strength of the opposition in the Diet until the situation changed completely after the last elections. Now the LDP rank and file appear determined to carry the Diet session their way with a clear majority. The opposition parties, although hit hard by the elections, seem to be recovering from their initial shock and are rolling up their sleeves to stand up to the LDP and the Suzuki Cabinet.

National interest in the current session is growing in many respects. The Suzuki cabinet which abruptly sprang up following the death of former Prime Minister Ohira and the election will clarify its character throughout the Diet session. Suzuki has reiterated the importance of "politics based on harmony" during the past two months but shied away from touching on his political ideals and visions.

In the first place, the prime minister must declare his political ideals frankly and clearly at the outset of the current session. What we want to hear from him is his own political philosophy rather than rhetoric prepared by bureaucrats. Should he read his policy statement like a parrot, it will hurt not only his career but the nation as a whole.

It is true that the LDP won an overwhelming victory in the double elections but few voters envisaged the emergence of a Suzuki cabinet, judging from the abrupt turn of events surrounding his debut as prime minister. Suzuki is duty-bound to answer these simple questions to the nation since he formed his cabinet. Many events have taken place both at home and abroad, and a good many of them have been handled without reflecting the clear-cut intent of the prime minister.

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

One of his most trusted cabinet members, Welfare Minister Kunikichi Saito, had to resign after admitting that he had received political donations from Sanae Kitano, 55, now detained by police for practicing medicine without a license. The affair disclosed that the LDP is still fraught with money politics and that the party leaders maneuvered to keep the lid on the questionable structure of the LDP by merely accepting Saito's resignation. Without probing into the heart of the matter, they attempted to cover up the affairs. Prime Minister Suzuki must clarify his stance and determination to establish political ethics before the nation.

On the memorial day of Japan's surrender, August 15, Suzuki and most of his cabinet paid homage at Yasukuni Shrine in Tokyo while Justice Minister Okuno made a controversial remark that he favored a revision of the constitution. Suzuki promptly denied Okuno's statement saying that his government had no intention of revising the constitution, but he has done nothing so far to restrain his cabinet members from engaging in the controversial issue, making the nation suspicious of his true intent on this score.

Suzuki became irked at criticism that he was rightist-minded, but he should then have made it clear why he was not, instead, he has just assumed an uncertain political posture. Upon hearing of the death penalty handed down to Kim Tae-chung, he remarked it was lamentable that things had come to such a pass, but again refrained from touching on the future of Japanese-ROK relations. On the defense issue, he has remained ambiguous amid continued U.S. demands that Japan strengthen its defense setup.

It appears that the government is prepared to take up the bills left over from the previous session and nothing more. But, such an attitude will only produce a backlash from the people. The Suzuki cabinet must clarify its basic policy during the current session, otherwise it will be betraying the nation.

The opposition parties will have to muster their strength to check the arrogance of the LDP. Whether or not politics can restore the people's confidence depends on what happens during the current session.

COPYRIGHT: Mainichi Daily News, 1980

CSO: 4120

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

MILITARY

GOVERNMENT CONTEMPLATES PLACING 'PRIORITY' ON NAVAL FORCE

Paris LE MONDE in French 1 Oct 80 pp 1, 4

[Article by Philippe Pons: "Tokyo Will Reinforce Its Navy To Protect Its Supplies of Raw Materials"]

[Text] The Iran-Iraq war constitutes a particular worry for Japan: like most of the non-communist countries in Asia, Japan depends on the Gulf countries for its supplies of oil. The successive crises in the Middle East, as well as the Soviet intervention in Afghanistan and the Vietnamese one in Cambodia aggravated its fears about the threat weighing heavily on its supply routes--essentially the maritime ones--for raw materials.

Accordingly, Tokyo is pursuing a program for the development of its navy which had previously been confined to the task of defending the coast-lines of Japanese islands.

In another development, Huang Hua, the Chinese minister of foreign affairs, denounced on Tuesday at the Council of Europe that the [struggle over] "hegemony" is posing threats on the communications routes of the Pacific and the Indian Oceans.

From Our Correspondent

Tokyo--Whatever its outcome, the war between Iran and Iraq as seen from an Asian point of view urgently uncovers a question far broader than that created by present events: the reliability of oil supplies. For this part of the world which relies almost exclusively on the Gulf states to satisfy its energy needs but lies very far from the sources of production, the freedom of sea lanes is vital.

This is especially true of Japan, a country which has been able to overcome the two oil crises of the last decade better than the other industrialized countries of the world. The Japanese, who import more than three-fourths of their oil from the Persian Gulf, are obviously not immediately threatened by the war in the Middle East since their 111-day stockpiles allow them to survive without much damage a temporary stop in

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

deliveries. However, they are once again measuring the vulnerability of their islands to any blockade on the routes used by the continuous round of oil tankers plying the waters between the Gulf and the archipelago. The Japanese are not alone in that: most of the South-Eastern and Far-Eastern Asian countries are also largely dependent on the freedom of sea lanes, and particularly on the free passage through the Straits of Hormuz. Indeed, the repercussions of the conflict were the theme of the meeting of the ASEAN countries' ministers of energy in Bali on Monday, 29 September.

Without being dramatic, the situation of the ASEAN countries, of Taiwan and of South Korea could become of some concern in the event the conflict expands. As a producer country which is largely self-sufficient except for a small quantity of refined products, Indonesia is reportedly ready to increase its production up to 1.6 million barrels a day to offset partially the difficulties that the other ASEAN countries might experience in the case of a new crisis, since their reserves vary from 30 to 75 days.

Despite the fact that it is a producer of raw materials and especially of oil, Malaysia is dependent on Saudi Arabia and Kuwait for 40 percent of its needs. However, the situation is far more delicate for those countries deprived of natural resources, and particularly of oil. Singapore, with its 3 weeks' worth of reserves, appears extremely vulnerable. This small republic is the third largest refinery center in the world: 75 percent of its imports are re-exported, but 85 percent of the supplies come from Saudi Arabia or Kuwait. Being a central refinery point, however, might allow it to obtain crude from other sources through the intercession of the companies established there.

Hong Kong largely depends on Singapore's situation: this British colony, which lacks appreciable reserves, is supplied from Singapore and China. If need be, it could be supplied by the latter without any difficulty. Thailand and the Philippines, two countries whose economy is experiencing some difficulties, depend by 90 percent and 5 percent respectively on oil deliveries transiting the Straits of Hormuz. However, they both enjoy relatively high stockpiles of up to 100 days. In the Far East, Taiwan, depending on Saudi Arabia and Kuwait for up to 80 percent of its supplies, only has one month's worth of reserves. Similarly, South Korea, which receives 95 percent of its supplies from the Persian Gulf and does not reveal actual figures for reasons of security, presumably only has 30 days' worth of reserves. Given the economic problems affecting this country and the recent increase in the price of gasoline and fuel, an oil crisis could have very serious consequences.

No matter how strong their economies, this dependence on the Middle East places the Asian countries in a rather analogous situation, whether it be an industrialized country like Japan, countries on the way to industrialization such as Taiwan, South Korea or Singapore, or still

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

underdeveloped countries like the Philippines and Thailand. This feeling of a "common fate" can only favor, on a long-term basis, the strengthening of this region's structure on an economic--and at a future date political--level around the pillar which is Japan.

Japan annually imports some 600 million tons of products--essentially raw materials--an amount which represents 20 percent of the world maritime trade. However, since the 1973 crisis, it has above all been made conscious of the fact that it was vital to its interests to ensure stable deliveries. It did so in various directions: first and foremost, by establishing direct ties with the producing countries: from 1976 to 1979, the share of the "majors" in the imports decreased from 70 to 56 percent.

On the other hand, the share of the direct contracts went from 15 to 33 percent of total supplies. At the same time, through a policy of investing in the raw materials-producing countries and of diversification of partners, Japan has attempted to establish closer ties with these, while simultaneously broadening the spectrum of its partners. In the field of both raw materials and oil, the Japanese have moreover stock-piled sufficient reserves allowing them to weather a crisis without too much difficulty.

Thus, the present primary goal for Japan and the other Asian countries is less to ensure the stability of supplies than guarantee the reliability of deliveries. This obviously entails the question of Japan's capability to protect its maritime routes. The lines of supply are too stretched-out for this country to believe it could indeed protect them militarily, even if this could be constitutionally envisaged, and this is obviously not the case. This is why the Japanese, who are indeed interested, exhibit a certain prudence in their reply to the recent Washington proposal for the creation of an international naval force to ensure safe passage through the Straits of Hormuz.

Precariousness of the U.S. Shield

The objective the Japanese are seeking is less ambitious and is aimed at the creation of a national naval force capable of protecting at least part of the maritime routes; this defense capability would allow Japan, together with its raw materials reserves, to preserve its neutrality in the event of a conflict not directly aimed against it. Despite its prestigious past, the Japanese navy is now only a coastal defense force unable to operate the moment it leaves the waters of the archipelago. Tokyo must rely almost exclusively on the American fleet to ensure the freedom of the sea lanes to Africa, the Middle East or the United States. In Japan's view, if instability in the Middle East or the Indian Ocean would compel the United States to send its naval forces to this particular area, the equilibrium in the Pacific would be affected. This

FOR OFFICIAL USE ONLY

is the eventual "vacuum" which the Japanese would like to partially remedy, if need be with the cooperation of other countries of the region: that is why they participated last spring in the RIMPAC maneuvers in the Pacific held jointly by Australia, Canada, New Zealand and the United States.

The Japanese navy, numbering approximately 500 units, cannot conduct combat operations beyond the reach of its air force and does not possess any aircraft carriers for long-distance missions; it must, therefore, operate within the framework of a joint force. The development of its capabilities presently underway (for the first time Japanese warships are being equipped with torpedoes) is apparently not causing a negative reaction on the part of its neighbors. The opening of Vietnamese ports to the Soviet fleet, events in Afghanistan, the increasingly definite threat to the safety of oil supplies, all contribute to the fact that nary a government among the ASEAN or Far Eastern countries would denounce the development program of the Japanese navy.

CSO: 4200

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

MILITARY

CONTROVERSIAL QUESTIONS DOMINATE DEFENSE SCENE

Tokyo BUSINESS JAPAN in English Sep 80 p 41

[Article by Yoshiteru Oka, Associate Editor, FUJI EVENING]

[Text]

THE Overall Security Study Group (chaired by Masamichi Inoki, president of the Research Institute for Peace and Security and former president of the Defense Academy), which served as a blue ribbon advisory body to the late Prime Minister Masayoshi Ohira, submitted its report on the results of research on Japan's overall peace and security to acting Prime Minister Masayoshi Ito in early July. It is doubtful to what extent and in what form the results of the research conducted by this private study group will be reflected in Japan's national defense measures. However, I would like to point out some of the suggestions made in the report that may touch off a controversy.

The focal point of the report is a recommendation for increasing defense appropriations. With its military and economic superiority having fallen, the U.S. can no longer afford to provide Japan with security as all-embracing as before. The time has come for each country to reorganize the old U.S.-centered military alliance setup into a new one which will place greater weight on the military capability of each country in order to maintain regional balance of power.

How about Japan's efforts to maintain peace and security? They are far from satisfactory. Japan's self-defense forces are nothing to boast of and her people lack awareness of defense requirements. Take the self-defense

forces' equipment, for example. The "Outline of the National Defense Program" approved by the Cabinet in 1976 has not yet been implemented as far as equipment is concerned. In this context, therefore, the report proposes that equipment acquisition expenditures should be increased by 20 to 30%, and that the national defense expenditure should be upped from the current 0.9% of Japan's GNP to about 1.07%.

In concrete terms, the report recommends that the defense expenditures set at ¥2,230 billion in the 1980 fiscal year national budget be raised to ¥2,650 billion. Not only should they be increased but also their distribution changed so that the ratio of equipment expenses to the total defense expenditure is raised from the current 21% to 29%, and that of research and development expenses from 1% to 5%.

If some categories of expenses are to be upped, other categories would logically have to be curtailed. The most drastic curtailment is proposed for personnel and provisions expenditures. They now occupy 49% of the total defense budget, but the report proposes that they be cut to 40%.

The report states: "The three defense forces of ground, maritime and air have independent organizations. Therefore, there is inevitably a duplication in officer requirements. The self-defense forces organization should be reorganized to get rid of

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

unnecessary personnel. Missile weapons should be designated as the mainstay equipment of the Ground Self-Defense Force, and the force itself should be reorganized to match a new formation to be centered on missiles, and wasteful expenses should be cut down."

Nevertheless, personnel expenses are ballooning because the basic wages of self-defense forces personnel are raised regularly year after year. Provisions expenses, too, are increasing. Providing that the increase rate of these expenses is 6% per annum, the personnel and provisions expenses in fiscal 1981 will be around ¥1,166 billion. Yet, the report suggests that the personnel and provisions expenses be held down to around ¥1,050 billion. The difference will be ¥116 billion.

This means that personnel and provisions expenditures will have to be curtailed in fiscal 1981 by about 10%. This would mean that 10% of the self-defense forces personnel would have to be discharged. The authorized strength of the three self-defense forces today is 267,800 men, so approximately 27,000 men would have to be discharged.

The 27,000 men would probably include some staff officers whose duties will not be required assuming the three self-defense forces are combined, as the report recommends. To begin with, unification of the three forces is the most difficult undertaking to achieve. Even if the three forces could be unified, the executive department personnel of the ground, maritime and air staff offices might be the only personnel who will become unnecessary. Compared with the total strength, the number will be minimal. The majority of men to be discharged

would probably be non-commissioned personnel. Suppose that 25,000 men have to be discharged. This is equivalent to more than half the authorized strength of the Air Self-Defense Force (45,500).

Such a big-scale reduction in force cannot be regarded simply as personnel retrenchment. It would be more accurate to recognize it as a drastic overhaul of Japan's self-defense forces. In connection with this reorganization, the report recommends that personnel reduction should be carried out by reorganizing the Ground Self-Defense Force into an organization of missile units.

The report most probably is thinking of replacing the infantry man's small arms with portable, man-carried missiles to boost firepower and to reduce the ground troops correspondingly.

Even tanks are inefficient without infantry support. Therefore, it is a basic principle that tanks have to operate in close cooperation with infantry units. Missile units will find it even more difficult than tank units to operate without support.

Then, reorganization of Japan's self-defense forces could actually lead to an increase in personnel as well as additional equipment expenditures. In other words, the ideas advanced by the report, whose main point is to increase equipment expenses at the sacrifice of personnel and provisions expenditures, is impractical.

Then, what was the purpose of all the research and study undertaken by this group? Was it a kind of demonstration for increasing Japan's defense expenses? Was it research for the sake of research? Or is there perhaps some other reason? □

COPYRIGHT: Nihon Kogyo Shimbun 1980

CSO : 4120

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

ECONOMIC

GOVERNMENT TO RELAX YEN LOAN BAN TO INTERNATIONAL ORGANIZATIONS

OW041349 Tokyo THE JAPAN TIMES in English 3 Oct 80 p 14

[Text] The Finance Ministry decided Thursday to lift in principle a year-old ban on extension of yen-denominated loans by Japanese syndicates to international organizations and foreign governments and enterprises.

The ministry will begin Friday explaining this policy to domestic financial institutions, such as banks, life insurance companies and trust and banking corporations.

The ban was placed in October last year as part of efforts to prop up the yen following its sharp depreciation against the U.S. dollar at that time.

The Japanese currency, however, has again begun appreciating sharply, making it no longer necessary to retain the ban, the sources said. The ministry believes the yen will remain strong for the time being in light of the recent strong performance of the Japanese economy, they noted.

The ministry also believes the retention of the ban over a long period of time may invite criticism from abroad that Japan is not willing to promote economic cooperation with other nations and international aid-giving organizations, according to the sources.

The sources said the ministry, however, fears that unconditional removal of the ban may lead to an excessively fast appreciation of the yen because such a measure may impress other nations as an expression of Japan's self-confidence about its economic performance.

The ministry thus plans to limit the amount of such loans to be extended in a quarter to about 100 billion yen for the time being. In addition, recipients of such loans will also be limited to the international bank for reconstruction and development (the World Bank) and the Asian Development Bank initially, the sources said.

COPYRIGHT: THE JAPAN TIMES 1980

CSO: 4120

11

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

ECONOMIC

MITI TO SUBMIT BILL TO DIET TO MAINTAIN LPG STOCKPILE

OW301433 Tokyo JIJI in English 1230 GMT 30 Sep 80

[Text] Tokyo, Sep 30 (JIJI Press)--The Ministry of International Trade and Industry (MITI) will submit a bill to the next ordinary Diet (Parliament) session starting late in December to facilitate stockpiling of liquefied petroleum gas (LPG).

The bill will amend the oil stockpiling law to obligate LPG importers to build up stockpiles.

This is aimed at securing stable LPG supply in this country, which depends on the politically unstable Middle East for about 60 percent of LPG supply.

LPG supply in Japan totaled 14.35 million tons in fiscal 1979 ending last March, including 9.67 million tons from abroad.

Of the imports, LPG from Mideast nations, such as Saudi Arabia, Kuwait, the United Arab Emirates and Iran accounted for as much as 82 percent. Suspension of supply from the region could deal a severe blow to Japan as LPG is widely used for household fuel, industrial fuel, motor vehicle fuel and chemical materials.

MITI plans to increase LPG stockpiles to the equivalent of 10 days' consumption by the end of the current fiscal year. After the revised oil stockpiling law takes effect, LPG stockpiles will be boosted by the equivalent of five days' consumption every year to reach a 50-day equivalent at the end of fiscal 1988.

The ministry also intends to have two or three private LPG importers found a joint LPG stockpiling company. It has already earmarked funds for governmental investment in the joint firm in its budget request for fiscal 1981.

As with the oil stockpiling project, subsidies will be given to local governments, which will allow LPG stockpiling facilities to be built in areas under their jurisdiction. At present, candidate sites for storage facilities are being selected by private quarters concerned.

CSO: 4120

12

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

ECONOMIC

BRIEFS

PRC SHIPYARD CONTRACT--Tokyo, Sept 24 (JIJI Press)--Mitsui Engineering and Shipbuilding Co. (Mitsui Zosen) has concluded a contract with Xingang Shipyard of Tianjin, China, to cooperate in the designing of 7,000-deadweight-ton freighters, the company announced Wednesday. Mitsui is the third Japanese company to provide cooperation to that country in the shipbuilding field after Hitachi Zosen (Hitachi Shipbuilding and Engineering Co.) and Mitsubishi Heavy Industries, Ltd. [Text] [Tokyo JIJI in English 1449 GMT 24 Sep 80 OW]

LOAN TO JORDAN--Tokyo, Sept 25 (JIJI Press)--The Governmental Overseas Economic Cooperation Fund Thursday signed a contract with Jordan to provide a loan of 8,693 million yen (about 35 million dollars) for expansion of telephone network. The loan, carrying an annual interest of 3.7 percent, will be repaid over 23 years, including a seven-year grace. [Text] [Tokyo JIJI in English 1400 GMT 25 Sep 80 OW]

BANK LOAN TO CHINA--Tokyo, 16 Sep (JIJI Press)--The Governmental Export-Import Bank of Japan Tuesday signed an agreement with the Bank of China to extend a United Bank loan of 21,000 million yen (about 84 million dollars) to finance China's coal development in four places, including Malan, Shanxi Province. The credit, carrying an interest of 6.25 percent a year, will be repaid within 15 years. It will be supplied under a 420,000 million yen (about 1,680 million dollars) credit line the governmental bank pledged to the Chinese bank under a memorandum on crude oil and coal development concluded between the two banks on May 15, 1979. Last May 23, the Export-Import Bank supplied Bank of China with 122,850 million yen (about 491.4 million dollars) as the first installment to finance the projects. [Text] [OW161447 Tokyo JIJI in English 1316 GMT 16 Sep 80 OW]

TV PLANT IN SHANGHAI--Matsushita Electric Industrial Co announced on 13 September it had agreed with China to complete installation of a black-and-white television picture plant in Shanghai by the end of 1980. The plant, capable of producing 1,600,000 units of 12- and

FOR OFFICIAL USE ONLY

14-inch tubes a year, will start operation next spring, Matsushita said. It will be the first Japanese-built electronic component plant to go into operation in China. Matsushita won the order for the plant from the China National Technical Import Corporation in June 1979. Hitachi, Toshiba Corp and Nippon Electric Co also received Chinese orders to build color and monochrome TV set and integrated circuit plants. [Text] [OW191241 Tokyo MAINICHI DAILY NEWS in English 16 Sep 80 p 5]

CSO: 4120

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

SCIENCE AND TECHNOLOGY

TOSHIBA DEVELOPS REACTIVE ION ETCHING SYSTEM

Tokyo NIKKAN KOGYO SHIMBUN in Japanese 5 Sep 80 p 16

[Text] Toshiba (president: Shoichi Saba) announced on the fourth that in conjunction with its subsidiary, the Tokuda Manufacturing Co (president: Taizo Saito; location: 104-1, Sagami-dai, Zama shi Kanagawa ken; telephone: 0462-56-2111), it had developed a fully automated reactive ion etching apparatus, called "TRIE," that can process line widths less than 1 micron with high accuracy. This apparatus made it possible to miniaturize line widths of less than 2 microns using the anisotropy etching technology; heretofore, these results were not obtainable from isotropy etching by the solution method or the chemical dry etching apparatus. It can be used as a commercial product and for VLSI research and development of such apparatus as the 256 KW bit memory. Toshiba has already installed several units and has begun using them in the mass production of 64 KW bit random access memory and 16 KW bit CMOS memory. The Tokuda Manufacturing Co will oversee the manufacture and sale of this apparatus. Sales will begin on 1 November and 30 units are expected to be sold during the first year.

The fully automated reactive ion etching apparatus "TRIE" will employ the thin film elimination process after the thin film has been formed and exposed in the semiconductor assembly process. An etching apparatus that can process polycrystalline silicon or silicon oxide, aluminum mask and others with line widths of less than 2 microns is being sought while semiconductor makers are converting their principal products from 16 KW bit memory to 64 KW bit memory and promoting the miniaturization of LSI patterns.

Heretofore, in isotropy etching with the wet method and the chemical dry etching method, it was difficult to miniaturize less than 2 microns when the pattern section of the lower part of the protective film (resist), which was supposed to remain, was undercut so that the processing reaction could advance uniformly in both the vertical and horizontal directions. Toshiba and the Tokuda Manufacturing Co solved this problem with the

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

reactive ion method and established the anisotropy etching technology which can process only in one direction. With the reactive ion method, reactive gas is released in a vacuumized etching chamber and the electrodes placed alongside the wafers, to be processed, are impressed to a high frequency of 13.56 megahertz. The gas is converted to a plasma state and the positive ions in the plasma of the negative potential, which is produced after the electrode is impressed at high frequency, bombards the top of the wafers. The chemical reaction at this time results in etching.

This apparatus has been greatly reduced to a compact size, to about one-fourth the size of existing types. The other special features of this apparatus are as follows: (1) the etching chamber is sealed off from the atmosphere, and the vacuum and gas pressure within the chamber can be controlled with high precision by using the load-lock mechanism and the newly developed revolving type throttle valve, (2) cassette-to-cassette full automation is realized with the microcomputer, (3) the electrodes on both sides of the top and bottom of the parallel-plate type can be impressed with high frequency and one etching process can accomplish both the reactive ion and plasma etching, (4) depending on the type of wafer, six kinds of gas can be selected and the quantity of flow can be controlled, (5) wafers from size 3 to 5 inches are applicable, etc. Toshiba has obtained the following test results: (1) reduced the size of the chips by 30 to 40 percent, (2) raised the yield by 1.7 to 2 times and (3) improved the accuracy of processing substantially. The price of one unit is 45 million yen.

The Tokuda Manufacturing Co plans to install a unit for demonstration purposes at the main office very shortly and it plans to display the apparatus at future semiconductor shows in Japan and the U.S.

COPYRIGHT: Nikkan Kogyo Shimbunsha 1980

9510
CSO: 8129/1710

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

SCIENCE AND TECHNOLOGY

NTT RESEARCHERS MAKE FLOURINE GLASS MATERIAL FOR OPTICAL FIBER

Tokyo THE JAPAN ECONOMIC JOURNAL in English 30 Sep 80 p 16

[Text]

Researchers at Nippon Telegraph and Telephone Public Corp. have developed a material for making optical fibers which radically reduces the loss of light during transit through communication lines.

According to the NTT Ibaraki Electric Communication Laboratory at Tokai Village, Ibaraki Prefecture, the research team led by Seiko Mitachi, optical equipment parts and components section chief, has made a special fluorine type of glass from a mixture of three fluorine compounds — barium fluoride, gadolinium fluoride, and zirconium fluoride.

The new achievement was announced at Japan's 42nd autumnal annual congress of the Chemical Society held at Sendai late in September.

The compounds are melted down for about half an hour in a crucible heated to 900 degrees C. and then cast into a bronze mold. Next they are extended

and processed into a fiber at proper temperatures.

The new optical fiber is only 0.457 millimeters in outside diameter. Its thinner light signal-carrying core section measures only 0.33 mm across.

To create a necessary difference in light deflection between the core and clad sections in order to prevent light leakage through the clad section, the researchers have confirmed the efficacy of the conventional method of adding some dopant (light deflection controlling material) like bismuth fluoride, aluminum fluoride or lithium fluoride to the clad section.

Significantly, they have found the new fiber can pass through lights up to 3 or 4 microns in wave length, a surprising expansion compared with only 0.8 to 1.5 microns for conventional quartz glass types of fiber.

That the new fiber transmits light so much better than the conventional material demonstrates a milestone achieve-

ment. There had been many hunts for such good optical fiber materials due to an apparent limit being reached in reducing such loss of light signals in quartz glass fiber.

The theoretical limit of such loss without a relay (repeater) — 0.2 decibels per kilometer — had been already almost been within reach, suggesting the need for finding some new material.

The new achievement is still just a laboratory attainment, involving great light loss and very impure basic raw materials commercially acquired. But it promises the development of a revolutionary kind of such fiber through future technological refinements.

The new achievement closely follows NTT's earlier similar laboratory success, reported September 11, in producing at a low cost an extremely high-purity optical fiber out of cheap, impure quartz glass with 0.5 or fewer decibels of such light loss.

COPYRIGHT: Nihon Keizai Shimbun Inc. 1980

CSO: 4120

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

SCIENCE AND TECHNOLOGY

BRIEFS

FUJITSU ROBOT PLANT--Fujitsu Fanuc Ltd., a world leading manufacturer of numerical control (NC) equipment, is to inaugurate an exotic, futuristic plant near Lake Yamanaka in Yamanashi prefecture in late November. At the Fuji Plant, now under construction, industrial robots controlled by minicomputers are going to produce industrial robots without human intervention, except for minor machine operation and administration. The plant is going to be what could be called the first "manless" plant in the machinery industry around the world when seen in terms of required manpower versus output. The plant is projected to produce industrial robots and other equipment worth 14 billion yen with only 100 people in the initial year and 60 billion yen with 200 people 5 years later. The number of people employed at the plant will be less than one-tenth of that in ordinary machine plants. [Excerpt] [OW271627 Tokyo MAINICHI DAILY NEWS in English 25 Sep 80 p 5]

CSO: 4120

END

FOR OFFICIAL USE ONLY